

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Docket: WALLACH=25

In re Application of:)	Conf. No.: 7238
)	
David WALLACH et al.)	Art Unit: 1636
)	
Appln. No.: 09/671,687)	Examiner: C. X. Qian
)	
Filed: September 28, 2000)	Washington, D.C.
)	
For: INHIBITOR OF NF- κ B)	October 10, 2008
ACTIVATION)	

RESPONSE

Honorable Commissioner for Patents
U.S. Patent and Trademark Office
Randolph Building, Mail Stop Amendments
401 Dulany Street
Alexandria, VA 22314

Sir:

The present communication is responsive to the official action of April 10, 2008. Claims 2, 3, 20-24, 38, 42, 44-46 and 48-50 presently appear in this case. Claims 44-46 have been allowed and claim 3 has been indicated to be allowable if amended to place it into independent form. The remaining claims have been rejected. The official action of April 10, 2008, has now been carefully studied. Reconsideration and allowance are hereby respectfully urged.

Briefly, the present invention relates to an isolated protein capable of binding to tumor necrosis factor receptor-associated 2 protein (TRAF2), which is either a polypeptide of SEQ ID NO:3 or variant thereof that has no more

than 10 amino acid changes from the amino acid sequence of SEQ ID NO:3 and retains its capability of binding to TRAF2. The invention further relates to compositions comprising such protein and molecules having the antigen-binding portion of an antibody capable of binding to such protein.

While the scope of the present protein claims was previously indicated to be acceptable under the written description requirement of 35 U.S.C. 112, the examiner has reversed that determination in the official action of April 10, 2008, and issued the following new rejection.

Claims 2, 20-24, 38, 42 and 48-50, have been rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The examiner states that the claims encompass any protein wherein at least a portion of the protein has 5 or 10 amino acid changes from the amino acid sequence of SEQ ID NO:3. The examiner states that the claims do not provide any structural information with regard to sequences with 5 or 10 amino acid changes from SEQ ID NO:3 capable of binding to TRAF-2 or to components of the NF- κ B complex. Thus, the examiner considers the proteins to be defined by function. The examiner states that there is no description of any variants of SEQ ID NO:3 in the specification, nor does the specification provide a structural analysis to identify the relevant structural features that are

required for binding activity. Thus, the examiner states that it is impossible to extrapolate from the example described those amino acid molecules that would necessarily meet the structural/functional characteristics of the rejected claims. The examiner states that there is a large genus of amino acids encompassed by the rejected claims (the change can occur at any place within "the 625 amino acid sequence" [sic, 949]) and that the skilled artisan would not have been able to describe the broadly claimed genus of sequences that bind to TRAF or to the recited components of the NF- κ B complex. Thus, the examiner concludes that the skilled artisan would have reasonably concluded applicant was not in possession of the claimed invention. This rejection is respectfully traversed.

The examiner states that SEQ ID NO:3 has 625 amino acid residues. This statement of the examiner is incorrect as SEQ ID NO:3 shows that this polypeptide has 949 amino acids. Thus, the maximum number of 10 changes would still leave a protein having 99% identity to the reference sequence. A total of only 5 changes would leave a protein having 99.5% identity with the reference compound. Thus, the present situation is substantially different from those in previous recent Board decisions, such as *Ex parte Kubin*, 83 USPQ2d 1410 (Bd. Pat. App. & Int. 2007), and *Ex parte Porro*, Appeal 2008-0184, decided March 11, 2008, relating to written description

in claims related in nature to those involved in the present rejection. Those cases involved written description decisions in which the claims required 80% and 90% identity, respectively. These claims are not dispositive of the present situation as the present claims require 99% or 99.5% identity. Thus, the genus of proteins encompassed by the present claims is much smaller than those found not to be in the possession of the inventor in *Kubin* and *Porro*. The fact is that such a small number of changes in such a large protein would not be expected to prevent binding. It is true that molecular biology is an unpredictable art and there are examples that can be cited in which only a few changes will substantially change the activity of a protein, but these would be exceptions to the rule that such a small number of changes would not be expected to affect binding properties.

The examiner is correct that there is only one example in the present specification of a sequence within the claimed genus, i.e., SEQ NO: 3. However, in this case, a single example is sufficient because of the tremendous structural similarity between every member of genus; when there is 99% or 99.5% identity of structure, it is reasonable to assume conservation of function. While there may be exceptions to the presumption of conservation of function for every one of the proteins covered by the present claims, the

claims do not read on any exceptions exceptions because the claims require that the expected function be present.

It is not necessary to have examples of every member of the genus. In this case, because of the at least 99% structural similarity in every member of the genus and the requirement that the members bind to a specific protein, there would be an expectation that each member of the genus binds, with the understanding that any exceptions to this expectation are not covered by the claims. From the point-of-view of written description, the 99% conservation of structure is sufficient to establish that applicant was in possession of the entire genus. It is not necessary to identify and eliminate every possible exception in order to be in possession of the genus. The single species disclosed is representative of the genus because all members have at least 99% or 99.5% structural identity with the reference compound. Thus, one of skill in the art would conclude that applicant was in possession of the necessary common attributes possessed by the members of the genus.

The above analysis should be sufficient to establish that claim 2, which requires 99% identity, be considered to comply with the written description requirement. However, it is requested that claim 48 be considered in its own right as it requires 99.5% identity, and thus the genus is even smaller

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than the relatively small genus of claim 2. Applicant should at least be considered to be in possession of all of the members of the genus of claim 48 based on the single example provided in the specification.

Additionally, claims 49 and 50 should be individually considered in their own right as each further substantially limits the size of the genus. Claim 49 requires 99% identity, but each of the changes must be a conservative substitution. That would mean that there would be an even greater expectation that every one of the members of this genus would have the required binding properties. The purpose of conservative substitutions is to maintain function. Those of ordinary skill in the art would certainly expect that a 949 residue protein with no more than 10 conservative substitutions would still bind in the same manner as the reference compound. Even more so, this is true for claim 50, in which there would only be 5 such conservative substitutions. The examiner has not cited any references that would suggest that the allegedly unpredictable nature of molecular biology would cause one to believe that 0.5% of conservative substitutions would be expected to affect binding properties of a protein.

For all of these reasons, reconsideration and withdrawal of this rejection is respectfully urged.

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It is submitted that all the claims now present in the case clearly define over the references of record and fully comply with 35 U.S.C. 112. Reconsideration and allowance are therefore earnestly solicited.

Respectfully submitted,

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